

WHAT IS CLAIMED IS:

1. An electron beam recorder comprising:
 - an electron optical system for irradiating an electron beam on a master of an information recording medium; and
 - an electron beam irradiation position detecting unit for detecting an irradiation position of the electron beam in the electron optical system while the electron beam is being irradiated on the master by the electron optical system.
2. The electron beam recorder as claimed in Claim 1, wherein the electron beam irradiation position detecting unit is provided, in the electron optical system, at a location closest to the master.
3. The electron beam recorder as claimed in Claim 1, wherein the electron beam irradiation position detecting unit comprises:
 - at least one shielding plate for shielding the electron beam, which has an edge brought substantially into contact with the electron beam in a horizontal feed direction of the master; and
 - an electron beam detector for detecting a quantity of the electron beam shielded by the shielding plate.
4. The electron beam recorder as claimed in Claim 1, wherein the electron beam irradiation position detecting unit comprises:
 - a shielding plate for shielding the electron beam, which has a hole for shaping the electron beam to a desired beam diameter and is divided, at the hole, into first and second regions in a direction substantially perpendicular to a horizontal feed direction of the master; and
 - first and second electron beam detectors for detecting, as first and second detection signals, quantities of the electron beam shielded by the first and

second regions of the shielding plate, respectively such that a difference signal of the first and second detection signals is obtained.

5. The electron beam recorder as claimed in Claim 1, wherein the electron beam irradiation position detecting unit includes at least one magnetic field sensor for detecting an intensity of magnetic field generated about a central axis located at an optical axis of the electron beam in the electron optical system.

6. The electron beam recorder as claimed in Claim 1, wherein the electron beam irradiation position detecting unit comprises:

at least one shielding plate for shielding the electron beam, which has an edge brought substantially into contact with the electron beam in a horizontal feed direction of the master and is coated with a luminescent layer for emitting light upon irradiation of the electron beam thereon; and

a photosensor for detecting an intensity of the light emitted by the luminescent layer, which is disposed so as to be directed towards the luminescent layer.

7. The electron beam recorder as claimed in Claim 1, further comprising:

an aperture which has at least two holes for bifurcating the electron beam into a main electron beam portion and a branch electron beam portion, respectively such that a position of the branch electron beam portion is detected by the electron beam irradiation position detecting unit.

8. The electron beam recorder as claimed in Claim 1, further comprising:

an electron beam deflecting member for deflecting the electron beam in a horizontal feed direction of the master, which is provided in the electron optical

system; and

a control device for controlling the electron beam deflecting member in accordance with a detection result of the electron beam irradiation position detecting unit so as to change an irradiation direction of the electron beam.

9. A method of detecting, in an electron beam recorder for recording signals on a master of an information recording medium by an electron beam, an irradiation position of the electron beam, comprising the steps of:

irradiating the electron beam on the master so as to record information on the master;

shielding the irradiated electron beam;

detecting a quantity of the shielded electron beam; and

detecting a position of the electron beam on the basis of the detected quantity of the electron beam.

10. The method as claimed in Claim 9, wherein an irradiation direction of the electron beam is changed on the basis of the detected quantity of the electron beam.

11. The method as claimed in Claim 9, wherein a shielding plate is divided into first and second regions and quantities of the electron beam shielded by the first and second regions of the shielding plate are, respectively, detected as first and second detection signals such that the position of the electron beam is detected by a difference signal of the first and second detection signals.

12. The method as claimed in Claim 9, wherein a quantity of the electron beam shielded by a shielding plate coated with a luminescent layer for emitting light upon irradiation of the electron beam thereon is detected.

13. A method of detecting, in an electron beam recorder for recording

signals on a master of an information recording medium by an electron beam, an irradiation position of the electron beam, comprising the steps of:

irradiating the electron beam on the master so as to record information on the master;

detecting an intensity of magnetic field generated about a central axis located at an optical axis of the electron beam; and

detecting a position of the electron beam on the basis of the detected intensity of the magnetic field.